

Remote EMI Field Strength Mapping, Phase I

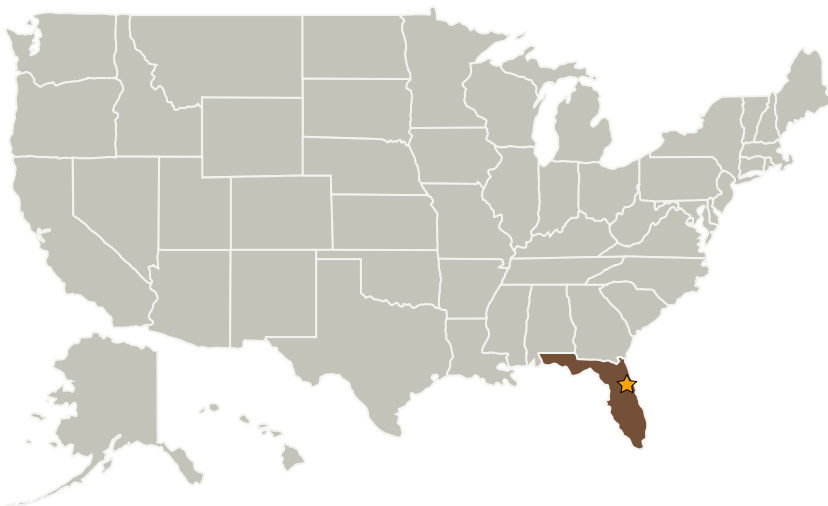
Completed Technology Project (2007 - 2007)



Project Introduction

NASA often must deal with the issue of protecting EMI sensitive payloads and instrumentation from damage due to radiated energy. Many of these EMI sensitive payloads can be damaged by seemingly benign sources such as communication networks or microwave ovens. The problem becomes more difficult when these sensitive payloads and instrumentation require movement from one location to another. It is extremely difficult and time consuming to identify and characterize the potential threat to these payloads with current tools and techniques. Soneticom proposes to utilize a small network of sensors to quickly and efficiently identify and locate sources of EMI radiation. Once the source is located Soneticom will utilize available signal parameters such as Received Signal Strength (RSS) at each sensor to estimate the signal strength at any point within the network's coverage area. Figure 2.1 is a conceptual diagram of how this innovation might look once displayed on a map. Soneticom will utilize the existing Lynx Geolocation platform which has the capability to identify and locate an EMI radiation source in the 20 MHz - 3 GHz range. The Lynx system will provide the hardware platform to develop algorithms required to estimate the signal strength across the network's coverage area.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
Soneticom, Inc.	Supporting Organization	Industry	West Melbourne, Florida

Primary U.S. Work Locations

Florida

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX02 Flight Computing and Avionics
 - └ TX02.3 Avionics Tools, Models, and Analysis
 - └ TX02.3.4 Electromagnetic Environment Effects